

Remarks

Claims 1-2, 5-7, 9-11, 22-26 and 33-35 are currently pending in the Application, Claims 36-41 are newly presented herein, and withdrawn Claims 3-4 and 8 remain as they depend from elected Claim 1, which, for the reasons stated in this response, is expected to be allowed by the Examiner. Hence, Applicants expect withdrawn Claims 3-4 and 8 to be allowed if the Examiner finds Claim 1 to be allowable.

New claims

This response adds new claims 36-41 to more completely claim the invention. Support for the new Claims 36-41 can be found, for example, on page 14, last paragraph of the specification and Figures 4, 6-7, 10a and 10c.

35 U.S.C. §102(e) rejection

Claims 1-2, 5-7, 9-11, 22-26 and 33-35 stand rejected under 35 U.S.C. §102(e) as being anticipated by Belikov (U.S. Publ. No. 2003/0231692). Applicants respectfully disagree. Applicants submit that the Examiner has not shown that Belikov teaches each and every element as set forth in the rejected claims. In particular:

Claim 1

A. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 1 of the present application:

“a retro-reflecting **Fabry-Perot structure** including a pair of reflective surfaces ” (emphasis added)

Referring to Belikov’s Figures 5A and 5B, reproduced below, the Examiner asserts that the “Fabry-Perot structure” as recited in Claim 1 is disclosed by Belikov’s surfaces “510” and “520” (p. 2, section 2, l. 5). Applicants respectfully traverse the Examiner’s assertion.

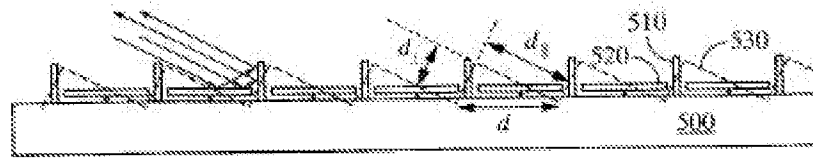


FIG. 5A

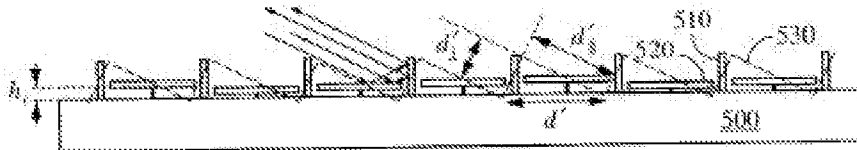


FIG. 5B

According to Belikov, the surfaces “510, 520” are orthogonal to each other (Figs. 5A and 5B and paragraph [0052], ll. 7-8 of Belikov). Contrary to Belikov, as known in the industry, the reflective surfaces of the “Fabry-Perot structure” as recited in Claim 1 are substantially parallel to each other, **not orthogonal** as disclosed by Belikov. Enclosed are partial copies of two U.S. Patents 5,208,886 and 5,062,684 and a partial copy of the Encyclopedia of Lasers and Optical Technology that show that the reflective surfaces of the “Fabry-Perot structure” as known in the art are parallel to each other.

Applicants submit that the Examiner failed to comply with 37 C.F.R. §1.104(c)(2) which states:

“In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes invention other than that claimed by Applicant, **the particular part relied on must be designated as nearly as practicable**. The pertinence, if not apparent, must be clearly explained and each rejected claim specified” (emphases added).

Applicants submit that the Examiner has failed to “designate as nearly as practicable” where Belikov’s surfaces “510, 520” are parallel to each other.

Because Belikov’s orthogonal surfaces “510, 520” **teach away** from surfaces that are

parallel, Belikov does not teach, disclose or suggest a “Fabry-Perot structure” as recited in Claim 1. Hence, Claim 1 is patentable over Belikov and should be allowed by the Examiner. Claims 2 and 5, at least based on their dependency on Claim 1, are also patentable over Belikov.

B. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 1 of the present application:

“a micromechanical device for moving at least one of the reflective surfaces of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective surfaces a distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation” (emphasis added)

Referring to Belikov’s Figures 5A and 5B, reproduced above, the Examiner asserts that the “micromechanical device” as recited in Claim 1 is disclosed by Belikov’s MEMS used to move surface “520” (p. 2, section 2). Applicants respectfully traverse the Examiner’s assertion.

According to Belikov, the surface 520 can be moved by a distance “ h_i ” as shown in Figure 5B above. However, the Examiner failed to “designate as nearly as practicable” as required by 37 C.F.R. §1.104(c)(2) where Belikov teaches that distance “ h_i ” causes the surfaces 510 and 520 “to switch between a reflective mode of operation and a transmissive mode of operation” as recited in Claim 1.

Because Belikov does not teach that distance “ h_i ” causes the surfaces 510 and 520 “to switch between a reflective mode of operation and a transmissive mode of operation” as recited in Claim 1, Claim 1 is patentable over Belikov and should be allowed by the Examiner. Claims 2 and 5, at least based on their dependency on Claim 1, are also patentable over Belikov.

Claim 6

A. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“a micromechanical device for **moving the moveable grating structure** relative to the substrate” (emphasis added)

Referring to Belikov’s Figures 5A and 5B, reproduced above, the Examiner asserts that the “moveable grating structure” as recited in Claim 6 is disclosed in Belikov’s Figures 5A and 5B (p. 3, ll. 6-7). The Examiner also asserts that “the substrate” as recited in Claim 6 is disclosed in Belikov’s substrate 500 (p. 3, l. 6) Applicants respectfully traverse the Examiner’s assertion.

According to Belikov, Figures 5A and 5B depict an array of corner-cube like structures that **together** function as a tunable blazed grating (paragraph [0052], ll. 1-2, 5-7 and 23-24 of Belikov). Belikov’s corner-cube like structures are defined by a fixed mirror 510 and a moveable mirror 520 (paragraph [0052], ll. 5-7 of Belikov). Contrary to Claim 6, Belikov moves only a **portion** (i.e. mirror 520) of the corner-cube like structure relative to the substrate 500. Unlike Belikov, the “micromechanical device” of Claim 6 is for moving the **entire** “grating structure relative to the substrate,” **not just a portion** of the grating structure as taught by Belikov.

Because Belikov moves only a portion of the tunable blazed grating relative to the substrate 500, Belikov does not teach, disclose or suggest “a micromechanical device for **moving the moveable grating structure** relative to the substrate” (emphasis added) as recited in Claim 6. Hence, Claim 6 is patentable over Belikov and should be allowed by the Examiner. Claims 7 and 9-11, at least based on their dependency on Claim 6, are also patentable over Belikov.

B. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“the micromechanical device being responsive to a signal to **impart modulation to an optical beam** which is retro-reflected from the retro-reflecting structure” (emphasis added)

Applicants submit that the Examiner once again failed to comply with 37 C.F.R. §1.104(c)(2) by not designating “as nearly as practicable” where Belikov imparts modulation on an optical beam. Because Belikov does not “impart modulation to an optical beam” as recited in Claim 6, Claim 6 is patentable over Belikov and should be allowed by the Examiner. Claims 7 and 9-11, at least based on their dependency on Claim 6, are also patentable over Belikov.

Claim 22

A. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 22 of the present application:

“the moveable optical element having **a first position** in which the retro-reflecting structure **retro-reflects the optical beam** and having **a second position** in which the retro-reflecting structure **does not retro-reflect the optical beam**” (emphasis added)

According to Belikov’s Figures 5A and 5B, reproduced above, the surface 520 can be moved from a first position to a second position wherein the two positions are separated by a distance “ h_1 ” as shown in Figure 5B above. However, the Examiner failed to “designate as nearly as practicable” as required by 37 C.F.R. §1.104(c)(2) where Belikov teaches that moving from a first position to a second position causes Belikov’s surfaces 510 and 520 to “**not** retro-reflect the optical beam” (emphasis added) as recited in Claim 22.

Because Belikov does not disclose a second position wherein an optical beam is not retro-reflected, Belikov does not disclose “the moveable optical element having a first position

in which the retro-reflecting structure retro-reflects the optical beam and having a second position in which the retro-reflecting structure does not retro-reflect the optical beam” as recited in Claim 22. Hence, Claim 22 is patentable over Belikov and should be allowed by the Examiner. Claims 23-26, at least based on their dependency on Claim 22, are also patentable over Belikov.

B. Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 22 of the present application:

“a micromechanical device for moving said at least one moveable optical element in response to a modulation signal to thereby **modulate the optical beam** as a modulated retro-reflected beam” (emphasis added)

Applicants submit that the Examiner once again failed to comply with 37 C.F.R. §1.104(c)(2) by not designating “as nearly as practicable” where Belikov modulates an optical beam. Because Belikov does not “modulate the optical beam” as recited in Claim 22, Claim 22 is patentable over Belikov and should be allowed by the Examiner. Claims 23-26, at least based on their dependency on Claim 22, are also patentable over Belikov.

Claim 33

Applicants submit that, at least for the reasons stated above for Claim 1, Belikov does not teach, disclose or suggest, at least “wherein the first reflective surface and the second reflective surface are **parallel to each** other in the first position and the second position” (emphasis added) as recited in Claim 33, because Belikov’s surfaces “510, 520” are orthogonal to each other. Hence, Claim 33 is patentable over Belikov and should be allowed by the Examiner. Claim 34, at least based on its dependency on Claim 33, is also patentable over Belikov.

Claim 35

Applicants submit that the Examiner has not shown that Belikov discloses, suggests or teaches, *inter alia*, the following features recited by Claim 35 of the present application:

“moving the moveable grating structure between the first position and the second position, wherein the **moveable grating structure and the substrate are parallel to each other** in the first position and the second position” (emphasis added)

Referring to Belikov’s Figures 5A and 5B, reproduced above, the Examiner asserts that the “moveable grating structure” as recited in Claim 35 is disclosed in Belikov’s Figures 5A and 5B (p. 3, ll. 6-7). The Examiner also asserts that “the substrate” as recited in Claim 35 is disclosed in Belikov’s substrate 500 (p. 3, l. 6). Applicants respectfully traverse the Examiner’s assertion.

According to Belikov, Figures 5A and 5B depict an array of corner-cube like structures that **together** function as a tunable blazed grating (paragraph [0052], ll. 1-2, 5-7 and 23-24 of Belikov). Belikov’s corner-cube like structures are defined by a fixed mirror 510 and a moveable mirror 520 (paragraph [0052], ll. 5-7 of Belikov). Contrary to Claim 35, Belikov moves only a **portion** (i.e. mirror 520) of the corner-cube like structure relative to the substrate 500. Unlike Belikov, the “micromechanical device” of Claim 35 is for moving the **entire** “grating structure,” **not just a portion** of the grating structure as taught by Belikov.

Because Belikov moves only a portion of the tunable blazed grating relative to the substrate 500, Belikov does not teach, disclose or suggest **“moving the moveable grating structure** between the first position and the second position, wherein the **moveable grating structure and the substrate are parallel to each other”** (emphasis added) as recited in Claim 35. Hence, Claim 35 is patentable over Belikov and should be allowed by the Examiner. New Claims 39-40, at least based on their dependency on Claim 35, are also patentable over Belikov.

Conclusion

In view of the above, reconsideration and allowance of all the claims are respectfully solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this document is being transmitted to the Patent and Trademark Office via electronic filing.

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